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The Present-day Organisation of Veterinary Research in Great Britain: Its Strengths and Weaknesses *

I.—*By* E. L. TAYLOR

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"Veterinary Research" may be defined as "the search for new knowledge of fact and the development of theory concerning health and disease in the animal body": and the course of the search may be likened to a spiral in which the worker acquaints himself with all that is known on a certain point, conceives an idea of the probabilities in the unknown, tests those probabilities and adds his findings to the accumulation of known facts before repeating the process a little higher up the spiral.

It may be convenient for the purpose of our discussion to separate the four steps (*a*) preparation, including training of the research worker; (*b*) construction of a working theory; (*c*) testing of the theory, and (*d*) the recording and publication of the findings.

As the field for discussion is a very wide one indeed it is proposed to confine this 15 minutes' contribution to a brief account of the strengths and weaknesses of one or two aspects only and to exclude such important points as the development of research with medical science on the one hand or agricultural science on the other, the allocation of funds, the direction of research, the organisation of material and of laboratory equipment, the co-ordination of field trials and the advantages of a Veterinary Research Council.

(*a*) *Preparation for Research*

In the first place we have to recognise the operation of a certain pre-selection during school years, resulting from popular ideas on the life of a veterinary surgeon as an open-air life among diseased or injured animals on the farm. This seems to carry with it some suggestion of manly vigour and, perhaps, of leadership—hence the rather outstanding success of veterinary students in the field of sport and their not infrequent election to responsible positions as student bodies. But the popular idea does not link a veterinary career with a research laboratory so that the few to whom the idea of research makes an early appeal are unlikely to enter the veterinary field. This is a handicap that may be of no account and in any case can only be rectified by a change in public opinion. There is however a certain need in the technical training of the veterinary student that seems to set him at a disadvantage in regard to research when compared with the university student of natural science. The honours degree course in natural science frequently requires the student to carry out a certain amount of research under supervision and the submission of a thesis for his final examination; whereas the training in our veterinary schools is very largely a matter of preparation for clinical work. The veterinary student has little encouragement to think of research, let alone make preparation for it, until he has completed his college course, and then if he has decided on a research career must begin to think of some further training in any one of a number of very different lines—for example, in animal nutrition, anatomy, pharmacology or parasitology. There can be no doubt that compared with the graduate in natural science he is much less mature when it comes to preparedness for research and has a considerable amount of leeway to make up. As a remedy for this disadvantage it is suggested that a more serious effort should be made to incorporate something of the research atmosphere into the ordinary course of veterinary instruction. The technical college attitude, that the student should not be expected to think, but only to absorb information, often made to appear more definite than it actually is, contrasts unfavourably with the ideals of a liberal university education. It is suggested that there should be some extensive provision for research studentships whereby those several students whose research interest has been stimulated during the ordinary course of instruction could carry out some 12 or 18 months' research within the veterinary college or the university before finally entering upon that branch of veterinary work as a life's career. During this period his work should not be too highly specialised, as precocious specialisation has its own disadvantage, but should consist of small investigations of different kinds perhaps in widely different branches of the subject. Such a system would provide a probationary period that might help to get over the difficulty of misdirecting unsuitable recruits into this highly specialised occupation and be of value to the research laboratories as well as to the research graduate.

As a finish to the training it might also be advantageous to spend a few months in a Veterinary Investigation Officer's laboratory in order to see something of the connection between field and laboratory investigations and to have contact with such matters as the preparation of culture media, sterilisation of glassware and management of small animals.

This matter of the training of research workers appears to me to be one of the outstanding weaknesses of our present organisation. There is another point that might fittingly be mentioned at this stage, concerning the employment of non-veterinarians in veterinary research laboratories. This is a very desirable thing to do providing the research worker, the chemist, biologist, or whatever he may be has completed his laboratory training and found his place in the field of work that he has chosen. Such a worker brings into the veterinary atmosphere not only his trained mind and his own specialised knowledge but also a circle of outside contacts that can be of the greatest advantage to his colleagues. This does not hold, however, for a new graduate in science who has comparatively little to give in exchange for what he may hope to acquire by coming into the veterinary field.

(*b*) *Construction of a Working Theory*

This important step in the process of scientific research is essentially a matter of individuality and is outside the scope of organisation. It would call for no mention here were it not for the bad effects that organisation may sometimes have on individual effort. Einstein has said that "one can organise to apply a discovery already made, but not to make one. Only a free individual can make a discovery." We shall doubtless all agree that so long as we are dealing with the research type the greater the freedom given the more diversity there will be in the ideas obtained and the more probability there will be of entry into new lines of enquiry and of the acquisition of new knowledge.

It may be argued that, in general, we in veterinary science do not deal with new ideas but only with investigational lines of work—applying new ideas, secured elsewhere, to the solution of veterinary problems. For example, the single discovery of the bactericidal properties of penicillin immediately opened out a vast field of possible applications to veterinary problems. Are we to regard that as calling for new ideas, and for the ingenuity of the research mind? I think we are. Whoever has looked into the origin of any discovery must have been impressed by the gradual nature of the process and the smallness of the successive steps. Every one of those steps, however, has called for the same sequence of events: preparation, construction of theory, trial and report, and comes into the scope of our discussion.

This quest for new ideas is a field for the exercise of the individual's ingenuity and imagination, and the requirement for a liberal education of the kind which has been fostered for so long in our universities is obvious. New associations and fresh ideas are more likely to come out of a varied store of memories and experience than out of a collection that is all of one kind. New ideas, I think you will agree, often come out of observation away from the laboratory, arising from free discussion and from fresh human associations; they are encouraged by freedom of movement and breadth of cultural background.

It is tempting to digress here into intriguing comparisons between the go-as-you-please of our democratic system, and the central organisation of the communal system as seen in its extreme form in the U.S.S.R., but time will not allow. It is certain, however, that our system is the better for the encouragement of inventiveness and in this second step in the research process our lack of over organisation sets us at an advantage, as also does the variety of our research groups in schools, universities, foundations and in our free association with agricultural and medical research organisations. In concluding this section on the second step in the research process I should like to recall one of the timeless utterances of Bacon who asks: "Is it not a shame for a natural philosopher, who is the watchman and huntsman

* Discussion by The Association of Veterinary Teachers and Research Workers, at the meeting held in Liverpool on April 13th, 1948.

of nature, to accept the testimony of truth from minds imbued and double dyed with custom ? "

(c) Testing of the Working Theory

This part of the research process is the one which lends itself most obviously to organisation, and as we in Great Britain are not very good at organisation there is much scope for improvement. I recollect an interesting conversation I once had with one of the directors of I.C.I. who gave an account of the appointment by his firm of a number of individuals of the inventive type, who are full of ideas, most of them hare-brained ideas perhaps, but none the less new. These men are given every facility to play about ; one may suppose that they are provided with large waste paper baskets and rubbish bins which is the natural end of the greater part of their efforts. Just now and again, however, they hit upon something that promises to be of value, but as soon as that has come about the whole matter is taken out of their hands entirely and placed in a properly organised and systematised department, where it is quickly developed for the extraction of the maximum benefit to the firm. This story is quoted as an example of the two very different requirements in successive stages of the research process for freedom of operation in the construction of theory, but for organisation of effort in testing it out.

Although the testing of a working theory may only be a matter of a few hours' work by one individual in a laboratory, not infrequently it is a much larger job calling for co-ordinated effort as, for example, in the trial of some theoretical method for the control of an epidemic disease.

There is a lot that could be said at this point on such topics, for example, as the advantages of free co-operation, the regrettable tendency towards the formation of water-tight compartments, the definition of " research direction," as to whether we should link ourselves with agriculture or medical science, about committee research (should not the actual workers always serve on the committees ?), team work (its advantages for the investigation of outlying problems) and the co-ordination of research by the Agricultural Research Council, or the Ministry of Agriculture or other bodies. I propose, however, to leave this part which will doubtless be dealt with by other members of our team of openers and to proceed to a point concerning the last stage in making one round of the research spiral.

(d) The addition of Research Findings to the Store of Known Facts

The main point that I wish to make here concerns an outstanding disadvantage of our free democratic system of individual research and individual reward. There can be little doubt that so long as we have research personnel and research facilities that are in any way adequate the greatest cause of delay in the progress of research is in the dissemination of research findings. In order to be sure of securing the scientific credit that is his due, there is a marked tendency to secrecy on the part of individual workers until very near the actual time of signed publication. As the process of publication itself may be responsible for a delay of some twelve months, and in some cases of two or three years, this constitutes a serious brake on progress.

When operating in its ideal way committee research is able to dispense entirely with this delay, each individual reporting his findings to the committee as soon as he is certain of the facts, or even before certainty has been reached, so that immediate use may be made of those points by all who are engaged in the work. This advantageous mode of procedure was exemplified during the war when certain lines of work proceeded at an unprecedented rate, partly because of the improved facilities and increased effort but in no small measure due to the immediate pooling of new information and its distribution in the form of reports to all of the workers that might be concerned. An outstanding example in the field of parasitology was the co-ordinated work of the Insecticidal Development Panel and the resulting enormous rate of advance in knowledge of the uses of DDT. The insecticidal properties of this substance were first discovered in Switzerland in 1939 but were not made known to the United Kingdom and the U.S.A. until December, 1942. The Insecticidal Development Panel began to operate in 1943 and a text book of some 300 pages was completed in 1945 and actually published in this country in 1946. It is conceivable that under our system of secrecy and private publication the first paper might not have been published in that time.

It is obvious that there were several factors operating to bring about such a record rate of addition of known facts, but there can be little doubt that the collective system of working, of pooling information as soon as it is acquired, and of disseminating to all concerned was in no small way responsible for the outcome. As a remedy it is suggested that the Letter-to-Nature idea might be extended and some veterinary publication, preferably a weekly one, should encourage research workers to submit brief reports on completed work or on work in progress, to receive early publication in the form of a letter to the Editor.

It is concluded that our objective should be to incorporate a little more of the ideal of collective effort without losing the advantages of our existing free system.

II.—*By* H. H. HOLMAN

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The subject we are to discuss is so vast that I am restricting myself to a part of a section that could be called " Control and Planning."

Veterinary research consists of such a small body that you would think it would be quite easy to provide it with a brain at the top and a personal central nervous system that would ensure co-ordinated action. But this is not the case, and in many laboratories and veterinary schools one finds the most distressing lack of planning and co-operation. In nearly every case one finds the different departments each working on a different problem. What a saving in space, in money and in animals there would be, and how much better the results would be, if the different departments would work together.

Take, for example, experiments on *Haemonchus contortus*. Different experiments have been carried out on sheep infested with this worm by parasitologists, biochemists, haematologists and pathologists ; while bacteriologists and physiologists have investigated the normal flora and function of the sheep's gut. What a pity it is that, instead of ten different experiments each by a different expert, we cannot get more to the idea of one experiment carried out by ten experts, thus adding the correlations between one measurement and the others.

It is difficult of course, mainly owing to the dignity and isolationism among teachers and research workers, and the feeling that, for their department to take a subsidiary role, in any experiment, is visible evidence of that inferiority that they hope to conceal. Would it not be possible to appoint someone with some knowledge of both research work and human nature—and surely there must be one or two in our profession—who could be armed with sufficient authority to try and arrange such co-operative experiments ?

Some of us may think that such direction of research is part of the duties of a Director of a research laboratory or the Principal of a college, but this is hardly the case. For those of you who may have been attached to a laboratory for only a few months, and who may not yet know who is the Director, it might be helpful if I gave a worm's eye view in general terms, of this august individual, common to most research institutes, both veterinary and non-veterinary.

The modern director visits the laboratory periodically. He may sometimes be seen at large, either engrossed with the gardeners or in earnest discussion with the chief of the clerical staff. Sometimes, when accompanying visitors, he even visits individual laboratories in the institute, when he gives evidence of the mental powers that have made him great by being able to greet most of the staff by name —in this, of course, he is sometimes helped by the little name cards often found stuck on the door.

More often, however, he is to be found closeted with the clerical staff, where he quickly makes several wrong decisions that will keep the institute at loggerheads until his next visit. By waiting in a queue it is sometimes possible for even a junior member of the staff to interview him and obtain a wrong decision for himself. After a day, or sometimes two, spent in clerical activity, the director disappears from view and is busy with his work of attending committee meetings, giving popular talks, writing popular articles, talking on the wireless and arranging for visits from the local rabbit club and other scientific bodies.

From the worm's eye view the same sort of thing exists in the case of Principals, and the only time after I graduated that I interviewed a Principal was to ask him to give a talk to a zoological society. At the interview he was telling somebody how to cook a trout on the " house 'phone," talking to a member of the press on the " outside 'phone," and discussing horse-clippers with a member of the surgery staff. Finally he turned to me and told me that if I wanted a scholarship to start in October I had better go away and write to him giving him the full details.

Worms, when they get together, often wonder why directors get that way, but I think the answer is that it is due to " office control " and for an explanation of this queer condition I would like to make an analogy with that war-time body known as the Home Guard. When the Home Guard was first formed everyone in the position equivalent to the rank of company commander had only one thought, the realistic one of trying to find weapons for his men and to teach the men to use them so that they could carry out their function of killing the enemy.

In the same way, long ago, the first directors may have tried to obtain equipment and tried to train their staff to do research work, so that they could carry out their function of contributing those original papers and monographs on which the advancement of knowledge depends.

This state of realism in the Home Guard was in some cases a very temporary one and commanders quickly learned that H.Q. had got a shorthand-typist, and then another and another. One speaks of the "spirit" and the "letter" of a contract, and in these Home Guards, as the "letters" increased so the "spirit" withered, and commanders soon learned that training was unimportant when compared to filling up forms, attendance at lectures on fighting in Siberia or in the desert, and frequent personal visits to H.Q.

Thus in one case it quickly came about that the only two occasions on which enthusiasm and lively discussion was observed at company commanders' meetings, was one where it was decided that the officers should wear different sorts of hats and the other where a new and quite impractical method of wearing the water bottle and the haversack were demonstrated and adopted. The "spirit" had withered and to be popular with your H.Q. you had to be prompt in your returns and the easiest thing to do with your men was to march them up and down the main street preceded by a big brass band.

From my worm's eye view I think that many directors of research institutes, both here and in the colonies, have succumbed to this office control, and are marching along behind brass bands. To train your men to kill the enemy you must fight for equipment, and for training facilities. You must discuss your defence schemes with your staff; you must delegate your authority and stimulate the spirit of initiative in your subordinates. To march behind the big brass band requires no planning, it pleases H.Q. far more, and you give all the commands yourself.

This function of "office control" in the veterinary world includes the control exercised by scientific committees. If these committees restricted themselves to hearing applications for grants for research work, if they called in appropriate experts to discuss whether or not the idea was sound, and if they granted the money and expected repayment by original papers, acceptable to scientific journals of good standing, then they would be fulfilling a necessary function. If in addition, they had a broad picture of the research field and tried to stimulate research work in subjects that lagged, that also would be a very useful function. Although I would not admit for a moment that these committees were the best means of exercising these functions. But it seems to me that committees are not content to stimulate research work, they lean towards controlling it, and that brings about some very unfortunate results.

To my mind committees are fundamentally incapable of controlling research work. Firstly, the committee consists of members each of whom is paid a salary to do a full-time job somewhere else. The majority of members are administrators who have no time to keep themselves abreast with the literature of any big subject. This means that they entirely ignore work on the same subject in other countries or listen with great credulity to any expert who quotes the original work that supports his own argument. As administrators their memories of research work take on a rosy hue and they are inclined to imagine that research work is more easy to plan and much more fun to carry out, than it really is, and they may become slightly overconfident and more inclined to walk in and plan an experiment than someone who is actually working on the same problem.

The committees are in many cases too large, which has an inhibiting effect on the mental powers, and they contain too many high-priests, so that criticism and sincerity are replaced by dignity and courtesy. In the Veterinary Research Club and other research or pathology clubs, if you put up a scheme it is shot at by bacteriologists, pathologists, biochemists and other experts and what remains of the idea is good. Committee meetings are more like the annual general meetings of the local tennis club where silly things are proposed and accepted without dissent and then, when the meeting is over all the ladies get together in groups and discuss why such ridiculous ideas were ever permitted.

These various deficiencies show themselves in many ways, but in none so clearly as the fact that veterinary committees, speaking of them as a species, have not yet grown sufficiently scientifically educated for them to know—without doubt—that a small, well-controlled experiment is, in every case, better than a large uncontrolled experiment, and workers who would blush with shame at the idea of carrying out an uncontrolled experiment themselves, allow themselves to be inveigled in committees to associate themselves with large-scale uncontrolled experiments based on what Mainland calls "Unwarranted Faith in Large Samples."

Besides an inability in planning, research committees like to control the outcome of experiments. A committee on a certain disease, or group of diseases, is the highest authority in the country and cannot be pushed around. Even if a question is asked in Parliament about a disease, the appropriate committee need only reply that "Research into this problem is being actively pursued" and it is perfectly safe, with one important proviso—that it does not publish anything.

Directly a committee allows anything that it controlled to be published in a scientific journal, then that publication will be read by research workers in Great Britain, in the Dominions and in foreign countries. Some workers will interpret the results in a different way, some may expose fallacies, some will use the article as a basi for further experiments and some may flatly contradict the results. In fact the article will receive that criticism and comment that has led to the building up of science and its continued progress. But to a committee this criticism is a responsibility and a possible source of grave embarrassment.

This possibility of criticism leads committees greatly to prefer reports. Reports are much more easy to deal with, they go by weight and they consist of a large number of duplicated sheets; at the top of the sheet there is a heading reading Green Valley Farm, or Blogg's Dairy Farm and things like that; down the sides there are names of cows, such as Daisy and Philpail—or just numbers (in which case the same sheets can often be used for sheep diseases as well). Then, dotted about the page we have the words: Marked. Slight. Definite and Doubtful.

By altering the introductory page the same report can be presented to different committees on different diseases. There, treatment is always the same. Whoever is acting as chairman weighs the report in his hand and says, "Well, Mr. Pasteur, I am afraid I haven't had the opportunity of reading your report yet; it is obvious that you have done a great deal of work; I'm afraid there won't be time to go through it now so will you just give us your ideas in a few brief words?"

This preference for reports sometimes has unfortunate results for the junior workers. Let us imagine a committee on Alphabet Disease. Let us imagine that a research worker who has been working for this committee—from which he is excluded as an untouchable—for three or four years, now thinks that he has been able to prove that A plus B equals C. As the time comes for the next committee meeting his superior comes to him and says: "Well, Mr. Smith, have you got anything for me to tell the committee?"

Mr. Smith parts up, and his superior puts his result before an eager committee. Poor little Smith also writes the work up as an article, adds a most succulent acknowledgment at the end in praise of his superior—in the hope that this will help publication—and tries to get it published. But nobody is interested. Why? Because the important people are on the committee and they now know all about it.

And so it comes about that some time later, poor little Smith, looking at *Tar and Feathers* or some other farming paper, sees an odd paragraph which tells that "Dr. Kock, a member of the Alphabet Committee, told a delighted audience at Pressbutton Poultry Congress, that A plus B equals C."

Can it be wondered at, that such a junior worker should refer to the committee as the defiled sons of a dead strumpet? But while we may sympathise with Smith that is not the important point. The important point is that this statement appears to research workers in other lands as a statement in the Agricultural Press without the data by which it could be criticised, and without ever having faced the criticism of the scientific press.

To end up, I have tried to show, by using one or two particular examples, that there is a lack of planning and control in veterinary research, and that such planning as is done is just a part-time job to people who may, or may not, be interested.

I have tried to advertise the fact that knowledge can only be built up on original papers and that research workers are eager to supply these papers, and I conclude by an appeal for some incentive to be offered to directors and to scientific committees to tempt them to encourage rather than discourage the publication of original work.

III.—*By* R. S. ROBERTS

Runcorn, Cheshire

I must confess that the preparation of this paper has given me much anxiety. It seems to me that when one is asked to speak on a wide subject like this, which is of interest to every member of his audience, it is difficult if not impossible to discover a course which is free from the platitudinous on the one side and from the pontifical on the other. To make my task easier I have elected to speak of only one aspect of our subject, namely that of personal relations.

I have taken it upon myself to deal with this because I believe that an examination of our activities from this angle could lead to a much clearer appreciation of the factors which cause frustration and hinder progress.

The British community of the 20th century is attempting something new and difficult when it pays a large body of highly trained men to engage in activities which are not immediately productive. The machinery which allows a section of the community to pursue its activities without friction often takes hundreds of years to evolve, by trial and error, *e.g.*, the system of land tenure. The overcrowded conditions of modern civilisation demand that this slow evolution must be replaced by the scientific study of any factors which may be holding us back and preventing us from making a full contribution to human welfare. Those things which cause men to irritate one another are often set aside as imponderables and ignored.

The subject of personal relations has received much attention since the early days of the war and a great deal of benefit has accrued to British industry from its study. My contribution to-day is an attempt to demonstrate how the principles evolved appear to apply in the field of veterinary research.

I will begin with a minor dictum from these principles, " Feelings and opinions are facts." If Mary Jones refuses to work next to Jane Smith, this is as much a fact as a derailed truck and may take more effort to overcome. We must admit that when they obstruct our paths, feelings and opinions must be dealt with. Secondly, the impact of personal relations on the individual has far reaching results. Let me quote from a recent article on the subject which puts it better than I could :—

" Regardless of your position in life, dealing with people is probably the greatest obstacle you will ever be asked to surmount. This is true whether you are an architect, an engineer, a private secretary or a research worker.

" Investigations made by the Carnegie Institute of Technology showed that even in such technical lines as engineering about 13 per cent. of one's financial success is due to technical knowledge and about 87 per cent. is due to skill in human engineering."

Thirdly, the research worker is almost in a class by himself in his susceptibility to the effects of personal relations. There are few other workers whose productivity will cease completely for days as a result of a minor row with an administrator. Again, his preoccupation with the abstract makes for ineptitude in day-to-day relations with other persons and, over short periods, narrows his point of view. It is in my opinion fantastic to imagine that the modern research worker can disregard his relations with his contemporaries and rely on the verdict of posterity. His work is part of a progressive pattern, and on the support of his contemporaries depend the scope which he is offered, the comfort in which he works, the ease with which his results are accepted in their earlier forms, and the attraction he will have for junior helpers. I have made these points :—(1) my subject is a reality ; (2) it is important to us, and (3) we are more than normally affected by it. I hope, therefore, that I have made a case for an attempt to attack our problems from the point of view of personal relations.

It is one of the cardinal points of organisation that there should be clearly defined lines of authority. There can be no quarrel with this, and the architects of research organisations have recognised it and have created organisations which conform with it in that the lines of authority generally pass from the financial backers, through a director to a group of research workers. The director, as in any other sphere, is expected to supply the drive, to convey the desires of the financial backers to his team, and to tell the financial backers how things are going on. In most spheres this appears to work well enough but in research work it breaks down because (1) a research worker finds it a whole-time job to supply the drive for his own research, and it is fantasy to imagine that any man can supply the drive for other research workers ; (2) once committed to a research programme the financial backers of research seldom wish to interfere with the worker during its progress, and (3) few things irritate research workers so much as having the results of their incompleted researches reported by others. This irritation springs from the fact that it is so difficult to convey a true picture of research in progress.

This disposes of all the functions of a research director so far as they concern the research worker. My contention is that these conventional lines of authority are basically unsound in research work, and that we should foster a movement towards a state in which the director's relation with other research workers is either that of a co-worker acting as president over a group of senior workers, without the function of reporting their work to outside bodies, or of allocating work to them, or alternatively towards a state in which the director makes no pretence to be a research worker but acts as if he were the manager of a block of service flats. You will perceive that there is implied in this a suggestion to return to the maestro system, in which one senior worker supplies most of the ideas and has with him a small team consisting of some junior workers and technicians, but having centrally provided services such as chemical analysis, centrifuges, library, cleaning, small animals and heating. Indeed, it is difficult to see why we ever departed from such a system. The action necessary to bring about this change is, like many things which affect personal relations, very simple. It is only necessary to ask the financial backers of research to cease using research directors as advisors, to ask directors not to report on the researches of others, and to group research workers around a senior worker who is engaged actively in a particular field. All this could be accomplished in a matter of days.

The remainder of my remarks must apply to our present conditions and not to the state I have outlined.

Where two sciences or departments are concerned in a research programme, one side must call the tune. A veterinary surgeon may supervise the animals in an agricultural experiment or a chemist may carry out analysis in a disease experiment. This arrangement can only work smoothly if it is a condition of employment that the " service " department should do this, and if the principal department is told frankly of the conditions under which the service department will do the work for them. The word " co-operation " is often applied to attempts to avoid this principle. Notwithstanding derision aroused by red tape, slips of paper are of great value in maintaining easy personal relations, *e.g.*, when a technician is given a temporary transfer to a department he dislikes, he has a guarantee to return if the temporary transfer is announced on paper. Again, if the stores issue material on a chit, trouble is avoided if there is a clear definition of those able to sign the chits, and if there is an easy system of deputising this power.

Considerable attention was paid during the war to methods of avoiding disputes. A scientific approach was made to the problem. Large numbers of petty quarrels, some of which led to larger things, were studied in detail. It is not sufficiently in line with our subject to go into it in detail, but the conclusion that incidents must be dealt with systematically is of interest, as is also the order recommended, *viz.*, (1) Get all the facts. (2) Weigh them. (3) Take action at the right time. This, if adhered to, can prevent many unpleasant results, *e.g.*, a technician who is habitually late comes in a little later than usual and you decide to settle this matter on the very morning when he has had a personal bereavement.

A number of things are left out of the conditions of service of research workers because there appears to be no easy way of defining them. It could do much good if we could get a clearer view of them. I will deal only with one, namely, time keeping. Some research workers feel that they should be at liberty to stay at home if they can pursue their work better there, as, *e.g.*, while writing papers, while others have equally strong conscientious feelings over the necessity of putting in full working hours at their laboratories. The system of ensuring time keeping, by having the Director's office overlooking the drive, is an expensive one and does not improve personal relations. I think that we should accept it as inevitable that attendance at the laboratory is necessary as evidence that we are not at a race meeting, and that we should relieve directors of their time-keeping duties by devising some other means of guaranteeing reasonable punctuality. I wish to make it clear that this is not a shy at directors ; it must be realised that under present conditions if a member of a research institute was reported by a member of the public to be spending his time at the local public house when he should be at work, the director would be held accountable. I claim merely that there are ways of relieving him of the constant presence of such a danger.

Finally, I come to an aspect of personal relations which requires more attention than all others, namely, the relations between the established research worker and the newcomer into the field. I am not certain whether newcomers can perceive ideas and plunge into useful research. The answer is probably " No." If this is so we may postulate that the only useful thing he can do for the first two or three years is to act as a laboratory technician. This time should therefore be spent largely in the intensive learning of technique, and it is with the relation between him and senior workers during this time that I wish to deal. The learning of technique is not done well in large classes in colleges ; I am greatly impressed by the similarity between our problem here and that which confronted British industry in 1941 and 1942. This was to instil some skill rapidly into the streams of charwomen, shopgirls, barrowmen and so forth who were directed into industry. The technique involves individual tuition, and if carried out in an organised way, is particularly adaptable to the circumstances of most university departments and research institutions. Agreement would have to be obtained from senior workers and senior technicians that they would undertake tuition. A list would be prepared, say by this association, of all the techniques which go to the make-up of the research worker in that field. In fact, almost the whole of the laboratory worker's skill can be broken up into self-contained sections for inclusion. This list would comprise such items as preparation of deep plate cultures, determination of packed cell volume, ovariectomy, statistical calculations, and intravenous injections. Any newcomer to research would thus have his course charted for him and would feel that he had an objective. Instructors in this method of training are easily available and the time spent on a course, which is about twelve hours, would be well spent.

It is my opinion that an infinitely better relation to the younger workers would develop if they entered humbly upon an organised route of this type. One of its main effects would be the acceptance of the status of trainee by the new entrant himself, by the senior workers and the technicians, and the elimination of the Alice in Wonderland atmosphere which exists to-day between the newcomer to research and the technician.

I must refer in a general way to some other factors which affect personal relations. First, salaries. From the point of view of personal relations there are two principles : (1) Salaries must be large enough to avoid the feeling that while he has his head in his books a number

of smart people all around are making off with all the money. (2) It is the consciousness of differences which upsets peace of mind, and hence a little less publicity would help.

Then comes the question of selection of personnel. It is already implied in my earlier statements that we do, in spite of ourselves, favour the likeable, but, apart from this there is the question of selection of the right character for particular work. Although there is a vast subject here, there is, running through it, a vein of simplicity. If we can mentally divide people into those who stick to rules and those who take a softer line, and those who are ambitious and those who are not, then we have a slight basis on which to select in the best interests of personal relations, *e.g.*, no ambition and human—animal house ; ambitious and human—media laboratory ; ambitious and strict—cultures, vaccines, etc. ; strict and not ambitious—testing work.

If these selections are correctly made they can eliminate personal relation difficulties ; for instance, strictness from a strict man is taken for granted : tact in the chief of your media laboratory can eliminate completely the irritations which arise from competition for his services.

IV.—*By* S. JAMIESON

North of Scotland College of Agriculture

In opening a discussion of this kind I think it is inevitable that different appreciations of the subject will lead to contrary opinions. Even after some weeks' consideration I am unable to separate completely " Organised Research " from the " Organisation of Research." While the latter undoubtedly refers chiefly to the framework, the former is interlocked in that skeleton. If, in a somewhat Joadian manner, we analyse our subject by asking first what we mean by research, then we may establish a focal point to attach organisation, strength and weakness if any or all of these exist. To me research, veterinary or otherwise, is a simple thing : the investigation of the unknown. In recent years the very simplicity of this has been somewhat fogged by an intellectual snobbery which partitions the subject into *Fundamental* or *Applied*. When research is not both fundamental *and* applied, in the usual meaning of these words, it ceases in my opinion to be research.

Veterinary research appears on a preliminary examination to have evolved just like Topsy, but in actual fact there is throughout the pattern a thread of obvious organisation. It is true that it is at times frequently difficult to follow this thread of silver, gold or plain black, according to one's outlook. The explanation no doubt lies in the fact that various personalities have woven the pattern and accordingly the strength of the person regulated the strength of thread. This fact brings us rapidly to the kernel of the subject of organisation. If we cast our eye backwards at this stage to review the quality of research there is one outstanding fact which I do not think we can ignore and that is the individual. It is a quite remarkable fact that until very recently the most valuable and important contributions to the investigation of the unknown have been made by individuals, and peculiarly by individuals in the most adverse conditions, and working under the greatest difficulties. It would not be wise to use these historical facts, however, as a basis on which to erect an organisation for veterinary research because obviously those specially endowed individuals will carry out research of high quality in the absence or even in spite of organisation according to their various temperaments. It is always much easier to criticise what has gone before than critically to offer suggestion for the future. It is the easier way to travel in that in these criticisms the framework of reconstruction can often find foundation stones. I make no apology, therefore, for approaching the detail of the discussion by first considering the weaknesses of veterinary research as they appear to me, under the headings : (1) General weaknesses, (2) The laboratory, (3) The training of the individual worker, (4) The interchange of information and ideas, and (5) Financial considerations.

(1) *General.*—To me the outstanding weakness of veterinary research has been its concentration on bacteriology, with its neglect of other subjects which may easily prove at the end of the day to be of greater importance to animal health. This, I admit, is not a surprising circumstance nor for that matter peculiar to veterinary research. It is only to be expected that the new world of microscopic living creatures which was swiftly unveiled at the end of last century offered at that time a seemingly limitless field of virgin pasture stretching to the horizon and beyond, in which the scientist could plough his furrow, in a klondyke of discovery. Unfortunately, while it is most probable that even in the 50 years which have gone, the marginal lands of these pastures have still only been ploughed, veterinary research must readjust its outlook if it is to fulfil its full usefulness and purpose. During that time the fields of animal nutrition, animal husbandry and the important complex interplay of animals and pasture have received much less than their due from our profession. This simple, and understandable, development has implanted a point of view on veterinary research which I think must in the near future be adjusted.

We have come to associate research with the complex paraphernalia of the laboratory. In consequence we have to some extent dulled the value of natural observation and perception, an essential of high quality research. Our clinical and surgical research has undoubtedly suffered. Even in the wide and unmapped fields of helminthiasis and parasitic infestations there have been only a few lone voices and consequently the chemist in an effort to utilise his waste by-products, bids fair to solve the problems, and possibly, in the process, has contributed to the new meaning applied to the word *Fundamental* which I mentioned earlier : fundamental in the sense that new knowledge on the subject is interesting, but useless, in so far as compound X.Y.2 will destroy all the worms belonging to species A.

Perhaps the most serious aspect of our neglect has been in the important field of pasture and animal. Our lack of research in this unknown has permitted a great many things to happen which may be excellent for the pasture but otherwise for the animal. Indeed, one is frequently tempted to believe that the absence of the veterinarian in this field of research has on occasion so affected the outlook that the essential purpose of growing pasture, namely to feed the animal, has been forgotten. Finally, even to-day how frequently are we diverted for many months because of the absence of our knowledge of simple normals. What is the weight and the size of the thyroid of a normal newborn healthy calf, foal, puppy and kitten ? What know we to-day of the copper content of the bovine liver, of the latency of spores of pathogens in normal tissue, or ruminant digestion ?

(2) *The Laboratory.*—The erection of laboratories is not a matter of organisation but of provision ; provision from either government or private sources. The situation of these laboratories is, however, one of organisation. In the past one of the weaknesses of organisation has been the congregation of veterinary research laboratories in or near the Royal Counties of England, and in developing these units into the larger type of laboratory, in some instances undertaking routine preparation of biological products, diagnosis, and many other varied endeavours. It would only be fair to deal lightly, however, with our criticism of this aspect of organisation because, as stated earlier, it has been the direct consequence of past inadequate financial provision.

To the existing research institutes I am convinced there must be added a number of institutes of the smaller type dispersed throughout the country. These institutes would best serve their purpose by concentrating upon local problems incorporating facilities for diagnosis, field investigation and research.

(3) *The Training of the Research Worker.*—For the exceptional individual, naturally endowed, no organised training is necessary. He will train himself.

One of the outstanding weaknesses of veterinary research at the present moment appears to me to be the inadequacy of training which has existed in veterinary research. I believe from what I hear, that the favoured opinion on this point, probably supports the system of plucking a promising young graduate fresh from the graduation ceremony, placing him under the wing of a senior research worker (who is generally too busy). Safely cloistered within parochial laboratory walls the youthful neophyte rapidly undergoes a period of sharp mental indigestion, shortly to be cured by the equally rapid vomition of the little clinical knowledge with which he entered his cell. At the end of a few short years he is in great danger of emerging so engrossed in the minutiae of detail that between himself and the cold, hard facts of naturally occurring animal disease there has developed a hiatus which frequently he never bridges. A good clinician need not necessarily know much about research but the able research worker must be a good clinician. Veterinary research to its own detriment has concerned itself with the dead at the expense of the living. A few days ago a well-known member of our profession in proposing a toast to a director of a veterinary research institute remarked that the director was once upon a time a V.I. in the Ministry and added, " and none the worse for that." This remark, made quite impromptu, is, I think, the basis of my idea of training. It is my belief that the research worker should be trained to avoid the difficulties under which the expert veterinary pathologist, or the parasitologist, the biochemist, the nutritionist, even the most fundamental bacteriologist, might find himself without a wide clinical experience. One hears of the co-called finished research worker. In my opinion no such person should exist. When a research worker regards himself as a " finished " product he will in fact be " finished " in another sense.

Training of the individual for research, in my opinion, should be on the broadest basis possible in the first few years, teaching him above all to use his hands, his eyes, ears and nose so that at the end of the day he will emerge as well balanced as possible in his erudition and in his approach to the mysteries of science.

(4) *The Interchange of Information and Ideas.*—It seems probable that in this sphere veterinary research has experienced a great weakness. I think that I will probably find myself in agreement with the majority of my colleagues to-day on this point. Two major

causal factors appear to me to have developed this weakness in the past: (*a*) the individual; (*b*) the sparsity of conveying media.

(*a*) The individual research worker has wilfully or otherwise contributed to the serious lag in the dissemination of knowledge, generally for purely selfish reasons. It is, I suppose, only to be expected that research will attract all types of moral conscience but the existing system which judges the individual upon the quantity of his publications, the defensive mechanism which has been raised against the predatory habits of a few workers who apparently have a highly developed "also ran" complex, have in my opinion contributed to the present-day stasis. We have in this small country of ours, even at the present time, and in spite of alleged co-ordination, this defensive barrier thrown up chiefly against the few acquisitive workers. It is in this sphere that probably the proper function of the "committee" could be most effective in stimulating amongst research workers generally, a wider conception of their obligations to scientific progress and possibly at the same time altering the system so that the individual worker is judged upon the quality of his daily work and skill.

(*b*) *Media of Conveyance.*—Just as the reactions of the individual have hampered the dissemination of knowledge between research workers, the distribution of new knowledge to the profession has been seriously inhibited by scarcity of journals, etc., and the fixity of belief that this is the only method. This weakness appears to me to be a serious one; so much so, that all earnestly interested in the well-being of veterinary research in this country should do something about it and that immediately. Apart from the obvious need for more journals devoted to veterinary science there is a more urgent need for the establishment of central machinery which will disseminate information amongst all the veterinary research workers in the country. There is an urgent need for workers to come together with greater frequency to discuss techniques, their own immediate problems, etc. Indeed, if I may be permitted to say so, in Scotland the nucleus of this idea is already in being as a result of the efforts of McEwen who arranges meetings to interchange ideas, whenever one or more workers find themselves overnight in Edinburgh.

(5) *Financial Considerations.*—"Freedom from want" is an obvious basic assurance which should be given to future veterinary research. Opinion will probably diverge markedly as to the source of this financial freedom. Personally, I believe it can only be from government sources but should be given with freedom of action. Veterinary research having reached the comparatively favourable position which it has, must be assured of financial stability if it is to continue and to expand into the many fields to which it rightly belongs. It is probably appropriate here to discuss the matter of the salaries of veterinary research workers. I am not convinced that veterinary research has suffered greatly in the past from a meagreness of salary. Indeed, I believe that some of its strength has been derived from this very state of affairs. Recently discussion has been considerable and lengthy upon this very point; status and salary have become gloriously confused. I believe that on this point we must return to a practical philosophy which will see the research worker as an ordinary individual doing an ordinary job of work. By all means let us haste to honour him when he has done something worth while, but the premise that all research workers will do things extraordinary, is an illogical conclusion. I believe that the quality of research might easily deteriorate under high salaries.

Conclusion.—On considering what I have said I find that I have indeed chosen the easy way of criticism without offering much that is constructive. I have also the dreadful feeling that some of the views which I have expressed will be completely opposite if not antagonistic. I think our subject lends itself very much to honest opinion, and honest opinion is frequently stimulating. In the organisation of veterinary research I believe that two immediate fundamental mechanisms are necessary. The first is the formation of a Veterinary Research Council under the aegis of the Agricultural Research Council or preferably closely linked with the latter. The second, the formation of technical committees under the convenership of senior research workers. These committees should function with considerable freedom and purpose, dealing with all aspects of veterinary research.

(*To be continued*)

THE INTERNATIONAL HORSE SHOW

We regret that in our issue of September 4th, under the above heading, we omitted to mention that Mrs. H. S. Gates, of Purley, was also among the successful competitors. Mrs. Gates won the Amateur Harness Class and Silver Cup, driving the pony stallion "Harley Allocation," and was also third in the Open Pony Harness Class driving the same pony.

THE VETERINARY RECORD
September 18, 1948

VETERINARY RESEARCH

IT is probably true to say the furtherance of research is as important as any of our professional responsibilities. It is right therefore that we should enquire into the present position of veterinary research, and such was the object of the discussion recently held by the Association of Veterinary Teachers and Research Workers which is published in this and the succeeding number under the title of "The Organisation of Veterinary Research: Its Strengths and Weaknesses." Articles which have been published in previous issues of this journal (*Vet. Rec.* **59.** 553 and **60.** 323) bear witness to the capabilities of this newly formed division of the National Veterinary Medical Association in providing reasoned opinion on educational problems, and although it may not be possible to agree with all they now have to say on research it cannot be denied they have raised points which should receive the closest attention.

Few will doubt the weight of argument which calls for a period of non-specialised post-graduate training for the new recruit before engaging on a specific problem; a period of probation when, apart from acquiring technical knowledge, the trainee—and his supervisor—becomes aware of his aptitude or otherwise for research. But, we may well ask, is a period of post-graduate training enough? Can we not throw this back to the teacher and ask whether the student should not be better grounded in the principles of research during the course of his college training? The discipline thus obtained would surely not be wasted whatever branch of professional activity were eventually pursued. Should research in the so-called basic sciences be the objective—and these subjects have been sadly neglected as research projects in the past—such a grounding should be acquired in the early stages of learning. It is here, more particularly, that the non-vocational part of college or university training should be of value to the future research worker.

Again, a degree of centralised control in Government-sponsored or independent research institutes is necessary and right, and the advice and guiding hand of the expert scientist is welcome. But much is to be said for the view that the control and planning of an experiment or line of research should be in the hands of a director and a group of workers forming a self-contained team as a committee unit; the team to be responsible for the report and the publication of results. In this atmosphere the young research worker could develop initiative and nothing need prevent subsequent individual endeavour should the problem be suitable and the worker qualified. Such a scheme would perhaps require re-organisation of the existing committee system and there are those who consider the first step should be the establishment of a Veterinary Research Council.

The average research worker is proud to say financial reward is not the prime consideration in seeking employment. Nevertheless no worker should be prevented from giving of his best by unwarranted financial embarrassment, nor should a situation be allowed to arise whereby a promising worker is attracted elsewhere solely on financial grounds. Conditions should be such that, following a period of training, stipends and chances for promotion should be generous and machinery should be available for salary and status to be commensurate with the qualities of the individual.

CLINICAL COMMUNICATION

Rupture of the Diaphragm in a Pig

E. K. PRICE

Final Year Student—Royal Veterinary College

Subject.—Eighteen-month-old Large White sow.

History.—The sow was found dead on the morning of August 21st, 1948. Apart from some slight dullness the day before, she had suffered no other illness or injury of any kind, and had farrowed normally five weeks previously.

Post-mortem examination.—Externally, the carcase was that of a normal well-nourished sow. A sero-fibrinous exudate was found in the abdominal cavity, however, and the ileum and much of the colon were markedly congested.

Some difficulty was experienced in freeing the stomach from its attachments, until closer examination showed the duodenum, about two or three inches from the pylorus, passing through a vertical "rent" in the left side of the diaphragm.

The chest cavity contained an almost black, intensely congested and oedematous mass of small bowel, covered ventrally by omentum, and comprising the greater part of the duodenum and jejunum. Strong fibrous adhesions were present between the diaphragm and those portions of intestine and omentum passing through it, constituting an obvious stricture.

The case is reported owing to the comparative rarity of the lesion in pigs, and the history of sudden death in the absence of any previous clinical manifestations of a condition which, from the extent of the adhesions present, must have been in existence some considerable time.

* Case seen in practice with Messrs. Eversheed and Smythe of Nottingham.

ABSTRACT

[A New Form of Distemper? Kantonowiez. (1947.) *Sonderdr. Monats. Vet.* February 2nd, 1947.]

During the last year, a disease of young dogs has appeared in Berlin, which shows symptoms of multiple catarrhs but which runs a different course from typical distemper.

In distemper there are medium to high temperatures; in the new disease 39·2 to 39·5° C. (around 103° F.), but it runs a longer course. Bronchitis and diarrhoea may withstand all treatment. Often the appetite is good and fatalities are rare. Brain disturbances may be an initial symptom, while in distemper these occur three to four weeks after the catarrhal form, and produce a temperature around 39·7° C. (104° F.).

Hysteria has only been seen in Berlin during the last two years, and the author mentions it solely in connection with differential diagnosis. Concerning treatment of this "distemper-like disease," the author mentions Omnadin, the sulphonamides, and sera—from all of which he has had variable results. Penicillin should be useful.

As to the causes, a second type of distemper virus is suggested, or possibly an entirely different infection.

In an addendum, the author mentions the increasing number of cerebro-spinal cases during the course of the year. There were convulsions (in distinction from poliomyelitis) and paralyses. There was nearly always a transitory glycosuria (also seen in poliomyelitis), but the author is inclined to attribute this rather to present malnutrition and lack of meat.

M. L.

Weekly Wisdom

One of the great lessons of history is that no nation can be stronger than its agriculture.—President Truman.

NOTES AND NEWS

Diary of Events

Sept. 18th.—Meeting of the North of Ireland Division, N.V.M.A., at Belfast (Ulster Farmers' Union Hall), 7.15 p.m.

Sept. 18th.—Annual meeting of the North of Scotland Division, N.V.M.A., at Bucksburn (Veterinary Laboratories, Mill of Craibstone), 2 p.m.

Sept. 23rd.—Special General Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 6 p.m.

Sept. 23rd.—Meeting of the North Wales Division, N.V.M.A., at Dolgelley (Golden Lion Hotel), 2 p.m.

Sept. 24th.—Meeting of the South Wales Division, N.V.M.A., at Carmarthen (St. Peter's Church Hall), 2 p.m.

Sept. 24th.—Meeting of the Biochemical Society in the Department of Biochemistry, The University, Sheffield, 11.30 a.m.

Sept. 29th, 30th, Oct. 1st.—R.C.V.S. Committee and Council meetings, 10, Red Lion Square, W.C.1.

Oct. 1st.—Meeting of the Welsh Branch, N.V.M.A., at Newtown (Bear Hotel), 2.30 p.m.

Oct. 6th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m.

Oct. 7th.—Meeting of the Central Veterinary Society at the Royal Veterinary College, 2 p.m.

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THE N.V.M.A. CONGRESS

Writing from Southport while the Sixty-Sixth Annual Congress of the National Veterinary Medical Association is yet in full swing, it may be recorded that whatever considerations prompted the Provisional Committee to introduce the innovation of a mid-week commencement, the enjoyment of the gathering has been much enhanced by the interval of week-end leisure, with its opportunities of excursion and relaxation. On Wednesday of last week over 300 members and their ladies, including a notably large and welcome proportion of "the younger element," foregathered in this handsome town, with an impressive number of representatives from overseas and delegates appointed by Government Departments and local authorities. It is a long overdue visit to the home ground of the Lancashire Veterinary Association, which has to its credit many decades of service as one of the most influential divisions of the "National," and those new to this natural conference centre were soon accepting with enthusiasm the claims made for it in these columns by the Hon. Local Secretary, Mr. Hewetson.

From the outset, when the incomers were the guests of the "Lancashire" at the Prince of Wales Hotel on the evening of Wednesday, September 8th, the success of studiously careful organisation was manifest. The reception gave a splendid send-off to the week—a typical Lancashire welcome which was most happily augmented by the Mayor of Southport (Councillor E. W. Raynor, J.P.) on the morning of the following day, when he opened the proceedings officially. The members and delegates, accompanied by not a few interested ladies, then made their way to the Victoria Hall, where the President commended to the careful scrutiny of the company, the representative and effectively arranged display of drugs, surgical instruments and appliances.

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The Cambridge Hall, Lord Street, where the sessional meetings were held, presented an animated appearance at 11 a.m. as members gathered to discuss the opening paper, by Professor Thomas Dalling, the newly appointed Chief Veterinary Officer of the Ministry of Agriculture, in elaboration of his theme that, following the recognition

of different sensitising agents and the introduction of the comparative tuberculin test, a position has now been reached when the results of testing can be assessed with a good degree of confidence. The discussion, opened by Mr. G. H. Arthur and Mr. J. McWilliam, fully maintained the interest aroused by the paper on this important subject, when, in common with all but one of those presented to Congress, it was circulated to members in advance. The exception was the contribution by Mr. A. C. Shuttleworth, of Liverpool, which followed in the afternoon. This Lancashire stalwart immediately came to the rescue of the Provisional Committee when the disappointing news was received of the inability of Sir John Boyd Orr, former Director-General of the F.A.O., to attend the Congress, owing to his absence abroad, and thus to deliver his eagerly awaited public address on World Food and Agriculture. It was no easy task for Mr. Shuttleworth to fill such a gap at very short notice, but he rose nobly to the occasion, providing a capital paper on a subject all too rarely dealt with nowadays—"Dental Diseases of the Horse"—discussion of which was ably opened by Colonel W. L. Sinton, District Veterinary Surgeon, British Railways.

A further series of welcomes followed: first an impressive Civic Reception by the Mayor and Mayoress in the Floral Hall, and on Friday by the Vice-Chancellor of Liverpool University, Dr. Mountford—a great company having been transported thither to tour the buildings and witness demonstrations in the various departments; then, on to the Veterinary Field Station at "Leahurst" for further demonstrations which proved of absorbing interest. Finally came that ever-popular function the President's reception, when Mr. and Mrs. Anderson gave everyone a thoroughly enjoyable evening at the Prince of Wales Hotel.

. . . . .

The Annual General Meeting on Saturday morning was a harmonious gathering, members being united more particularly in their acceptance of the Council's recommendations for the holders of office in the Association for the year 1948–49. As President of the N.V.M.A., therefore, we have, in succession to Mr. L. Guy Anderson, Dr. R. F. Montgomerie, B.SC., F.R.C.V.S.—justly described by the former as possessing "wisdom, understanding and great good nature." The need for a practitioner, with knowledge and experience, to come into the team as President-Elect (Junior Vice-President: the Senior is the retiring President) was felt to be fully met by the selection of Mr. John William Bruford, M.R.C.V.S., of Sevenoaks. The members again showed their appreciation of their services by re-electing Mr. H. E. Bywater as Hon. Treasurer and Mr. Geo. N. Gould as Hon. Secretary.

The PRESIDENT, Mr. L. Guy Anderson, in a typically forthright address, first expressed his personal disappointment at the failure of the Association's efforts to improve the status and salaries of the veterinary officers of the Ministry of Agriculture, the necessity for which "is recognised by the whole of agricultural and Parliamentary opinion—in fact, by everybody except the Minister and his senior advisers." The cudgels would be taken up as soon as conditions made this possible.

Passing to the Veterinary Surgeons Act, recently placed on the Statute Book, in his view the importance of the title to be given to those on the Supplementary Register had been exaggerated. Members of the profession should now set them an example in ethical matters and assist them in the furtherance of their knowledge. The President did not favour any attempt to filch the title "doctor" for the veterinary surgeon, whose position and status depended not upon title but, above all, on conduct, deportment and premises worthy of those employed in the practise of a learned profession. Enhanced status also would accrue from each taking a more active part in the initiation of policy in relation to all matters rightly within the province of the veterinarian. The profession should commence forthwith to give a more active lead, primarily through the N.V.M.A., in such matters as animal welfare, the promotion of an active disease control policy, development of research in artificial insemination, and improved methods of meat inspection, with particular reference to the question of the Jewish method of slaughter, which had been brought before public opinion, to his credit, by the Hon. Treasurer of the "National," through the medium of *The Veterinary Record*. The President visualised the future of animal welfare work not as a charitable enterprise but as a social service; our immediate object should be not free, but assisted, treatment.

Mr. Anderson devoted the remainder of his address to the subject of animal disease control, with particular reference to bovine tuberculosis. The Association had made a great step forward in the introduction of the "panel scheme" for the control of the major diseases of dairy cattle, but what could give the profession greater status than a serious and successful attempt to eradicate tuberculosis from our herds? The problem should first be attacked not in lightly infected areas, but where the disease was causing most harm. "Cumbersome and expensive" was his description of the application of the tuberculin test as used in a misguided attempt to develop "isolated herds of highly susceptible animals surrounded by others with a high rate of infection." This was, in effect, what the attested herd scheme did. Herds became free by developing disease-free young stock and this was the system that should be applied. "I am quite certain," said the President, "that if those in authority were to forget many of our traditional ideas on tuberculin testing and develop a new bold plan which could be put into operation at the minimum of expense and waste of man-power, tuberculosis could be eradicated in this country, or at any rate reduced to an extremely low level, within a comparatively short term of years."

The President concluded by urging upon the profession the initiation of policy, in preference to following the "uninspired and quite often misguided" lead of others. It should shake off the shackles of tradition whilst at the same time benefiting from past experience, framing its policy on the broadest lines for the national rather than sectional good.

After a brief discussion Mr. STEELE-BODGER secured a majority for the following motion:—

> "It having been observed that during the passage of the Veterinary Surgeons Bill 1948 through both Houses of Parliament, it was stated that no matter what title was given to those entered on the Supplementary Veterinary Register, qualified and unqualified alike would be known as 'Vets.', this meeting of members of the National Veterinary Medical Association assembled in annual conference registers its disapproval of the abbreviation 'Vet.'

used as a noun in relation to members of the Royal College of Veterinary Surgeons."

A pleasant feature of the meeting was the award of the Dalrymple-Champneys Cup and Medal (for published work in the advancement of veterinary science) to Mr. F. Blakemore, who recently has been appointed to the first Professorship in our calling to be established in the University of Bristol.

As the International Veterinary Congress is due to be held in London next year, there will not be a full-scale "National" Conference, independently of that event, in 1949, but it was unanimously agreed to hold our Congress of 1950 in the City of Cardiff. In this section relating to the business of the Association, there should be noted the pleasing intimation at the Meeting of Council of September 9th, that the membership of the N.V.M.A. now stands at the record figure of 3,274.

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There followed a day and a half of freedom from the mild compulsion imposed upon the conscientious by an official programme, though to be sure the great majority took advantage of the arranged excursion to the Lake District on Sunday. Though the weather treated us badly on this day, the trip provided a most refreshing opportunity of renewing acquaintance with scenes well known and loved. Other happy parties were made up and much exploring done, while good practice was put in for Tuesday's golf competitions.

On Monday all again got down to business in the sessional hall, when Mr. E. Brayley Reynolds and Mr. J. S. M. Cosgrove opened a good practical discussion on the paper "Equine accidents in the fields of sport" submitted by Mr. Henry Sumner. In the afternoon our public health men had a field day, led by Colonel Harold Egan, of the U.S. Army Veterinary Corps, and Dr. K. Seidel, Deputy Chief of the Health Committee, Copenhagen, in discussing Mr. Horace Thornton's paper, "The present situation with regard to food inspection in England and Wales." In paper and discussion, the present system of meat inspection was severely criticised. Its deplorable state in England and Wales, and the lack of scientific approach to its many problems, could be attributed almost wholly to the fact that veterinary surgeons employed on a whole-time basis had, up to the present, been called upon to play only a minor part in the inspection of meat and other foods. The remedy for another defect, urged by many speakers, was the equipment of slaughter houses for biological inspection. The wholesale slaughter of young, healthy horses for their meat was condemned. A day of long sittings, but interesting and informative, and terminating most agreeably in some admirable speech-making at the Annual Dinner.

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N.V.M.A. Grassland Conference

Members are urged to reserve accommodation immediately for the above conference, to be held in London on October 28th and 29th. It is hoped to publish a programme in our next issue.

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PERSONAL

Births.—Gooch.—On September 9th at the Lutterworth Cottage Hospital to Lesley (*née* Regnauld, M.R.C.V.S.) and Richard Gooch, M.R.C.V.S.—a son, Michael.

Pemsel.—On September 3rd, 1948, at the Hythe Nursing Home, Kent, to Joan (*née* Tarrant), wife of J. D. Pemsel, M.R.C.V.S.—a brother and sister for Angela (David Stephen and Amanda Joan).

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Marriage.—Lewis—Morgan.—On August 19th, 1948, at St. Sadwrn Church, Llansadwrn, Carms. Thomas Rees Brian Lewis, B.Sc., M.R.C.V.S., to Aldyth Verona Morgan.

Sir Weldon Dalrymple-Champneys, Bt., M.A., D.M., F.R.C.P., D.P.H., will take office as Chairman of the Council of the Royal Sanitary Institute on October 1st, 1948.

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COLONIAL DEVELOPMENT TO AVERT FAMINE

Sir Henry Tizard, in his address as President of the British Association for the Advancement of Science, pointed out that the population of the world was increasing by one per cent. a year and said its distribution was such as to make it extremely doubtful whether the supply of food could keep pace even with the present low standard of nutrition. The danger of the position was not yet fully realised, in spite of all the work and the publicity of the United Nations Organisation and, in our own country, the well-informed debates and warnings of the House of Lords. So far as this country was concerned, we must plan our economy on the assumption that food would be both scarce and dear for many years to come. Whatever other countries might do, it was our bounden duty, and the only way of safeguarding our future so long as we remained a large food-importing country, to develop our colonial territories.

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THERAPEUTIC SUBSTANCES MADE AT THE VETERINARY LABORATORY, MINISTRY OF AGRICULTURE AND FISHERIES, WEYBRIDGE

Veterinary surgeons who purchase products made at the Weybridge Laboratory, occasionally return unwanted quantities with the request that their accounts be credited with the value of the returned product. It will be readily appreciated that there are many reasons why such products should not be re-issued by the Laboratory, and in consequence it is the general rule that no credit can be allowed for returned consignments. It is, therefore, in the interests of the veterinary surgeon in particular, and of the country in general, that every care should be taken not to order more than is required and thus avoid wastage.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Foot-and-Mouth Disease:

Yorks (*E. R.*).—Southorpe Lodge, Seats Hill, Seaton, Hull, Yorks, E. R. (September 7th).

Sheep Scab:

Lancs.—Brown Cow Farm, Wardle, Rochdale, Lancs. (Sept. 1st); Pasture House Farm and Heights Farm, Littleborough, Lancs. (Sept. 2nd).

Yorks. (*W.R.*).—Ramsden Farm, Todmorden, Lancs. (Sheep belonging to three different owners) (Sept. 2nd).

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"VETTING" ADVERTISEMENTS

Under the above heading, in its issue of September 4th, the *Pharmaceutical Journal* observes: "Much of the work of the Advertisement Investigation Department of the Advertising Association is necessarily of a confidential nature and therefore is not available for publication. Nevertheless, the 'vetting' of advertisements is being regularly undertaken and recommendations are made in appropriate instances.

"The latest issue of the Association's quarterly journal reports that the subject of the advertising of oral vaccines has been under review and the general impression obtained by the Committee from reports in medical and other journals was that no vaccine, whether administered by the mouth or by injection, was of established value, and nothing appeared in the material supplied by the manufacturers to qualify that impression. The A.I.D. Sub-committee was unable to form any conclusive opinion on the value of oral vaccines and 'took note that the claims made did not appear to be based on properly controlled tests.' The Sub-committee recommended that special care should be taken to examine 'copy' offered for oral vaccines, and that no advertisement should be accepted which suggests that immunity can always be obtained. Advertisements should only be accepted if the advertiser makes it clear—by the use of such phrases as 'may give immunity,' 'may protect against,' 'immunity may be obtained'—that not every patient treated can be expected to respond.

"These recommendations came before the full meeting of the A.I.D. Committee and it was agreed that they should be brought to the notice of the Joint Committee of the Newspaper Proprietors' Association, asking for their views. It was further decided that the manufacturers of oral vaccines should be informed that in the

opinion of the A.I.D. Committee the wording of labels, advertisements, literature and packings should meet with the approval of recognised medical requirements; it should also be made clear by the manufacturers to the public that it is not possible to 'guarantee three months' immunisation' to all who take oral vaccine treatments."

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THE EFFECTS OF EXSANGUINATION ON THE AGGLUTININ CONTENT OF THE BLOOD

Dr. Thomas Moore, of the Division of Animal Pathology, Science Service, Dominion Department of Agriculture, contributes the following to the April issue of the *Canadian Journal of Comparative Medicine*:—

Occasionally rumours are circulated that certain malpractices can be employed to interfere with the tube agglutination test for the diagnosis of Bang's disease. One of these is that of controlled partial exsanguination. The theory is that after the removal of a "large volume" of blood and during the period of physiological restoration of the blood to its original volume, the serum antibodies will be diluted by the newly formed blood elements so as to reduce the serum titre of the animal concerned.

To test this theory, two cows numbered 423 and 460, and having tube agglutination titres of 1:200 and 1:400 respectively were selected. Cow 423 was six years old and 8·5 months pregnant, cow 460 was five years old and not pregnant.

Prior to venipuncture and at frequent intervals thereafter for a period of six days, rectal temperatures were recorded; blood samples were collected for haemoglobin and cell volume determinations and serological testing.

Using a 14 gauge bleeding needle 7·5 litres of blood were withdrawn from cow 423 and 11 litres from cow 460. The blood was collected in sodium citrate solution in sterile containers and was ready for immediate transfusion should shock develop.

Observations

Variations in the serum titre as determined by the rapid and tube agglutination tests and the complement-fixation test were moderate and of no practical importance in routine testing.

The removal of 7·5 litres and 11 litres of blood from cows 423 and 460, respectively, did not appear to affect their physical condition. Cow 423 calved normally 14 days later.

During the period of observation, the rectal temperature and blood cell volume of each animal remained practically constant. There was a decrease in the haemoglobin content of the blood, from 52 per cent. (Sahli) prior to venipuncture to a minimum of 35 per cent 48 hours later, after which there was a gradual increase. By the 144th hour the haemoglobin had returned to 40 per cent.

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VIIIth WORLD POULTRY CONGRESS

In connection with the Eighth World's Poultry Congress which was held in Copenhagen from August 22nd-27th, a correspondent writes: "The disease section of the Congress achieved probably the highest standard of all, the papers and discussions being well attended and most stimulating. English veterinary surgeons took a particularly prominent part and I think it was generally admitted that their papers were outstanding.

At the invitation of the Danish Government the opening paper of the plenary session was presented by Mr. T. M. Doyle on the subject of Newcastle Disease, and was particularly well received. Others who presented papers which also were keenly appreciated were Messrs. A. Buxton (Animal Health Trust)—Avian Salmonellosis; W. McKay (Iodine Education Bureau)—Treatment of Fowl Coryza; H. G. Lamont—Control of B.W.D. in Northern Ireland; R. F. Gordon (Animal Health Trust), J. Reid and F. D. Asplin—Newcastle Disease in England; D. Luke (N. Ireland)—Round Heart Disease; J. E. Wilson—Round Heart Disease; N. S. Barron—Diseases associated with Nutritional Defects; and C. Horton-Smith (Animal Health Trust)—The Effects of Sulphonamides on Avian Coccidiosis

Altogether some 27 papers were given by British scientists; they will be published with the proceedings of Congress, in volume form, in due course.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

THE VETERINARY SURGEONS ACT

Sir,—I have read with some interest the letter from Mr. John Smith published in your issue dated August 28th, 1948. I have also read with equal interest and deep misgiving, Lord Amwell's letter in *The Times* for August 3rd. I leave it to my colleagues to form their own opinions on these two letters. For myself, I am in no doubt whatever as to the implications of Lord Amwell's letter. No amount of soothing syrup of the type so liberally administered by Mr. Smith can dispel them.

As one of those who wrote criticising the Bill and deploring the weak-kneed action of Council, R.C.V.S., in tamely submitting to Government dictation, I consider that this letter of Lord Amwell's amply justifies my attitude. In his letter we have a plain statement of how the various Animal Welfare Societies interpret the Bill as it affects their so-called technical officers. Up to the time of writing there has been no Government denial of this interpretation, nor is there likely to be one.

For years the major handicap from which these societies have suffered has been the fact that their staff lacked any sort of title. Now, thanks to this Bill, that handicap has been removed. The coveted title of "Veterinary Practitioner" has been granted to them and the way lies clear before them. As Mr. Smith so glibly remarks, "Another era has dawned for the profession," and what an era it promises to be! I venture to prophesy that in a few years' time the unpleasant fact that we have sold our birthright will begin to dawn on even the most fervent supporters of the Bill. They may even live to see the honoured role of President of the R.C.V.S. filled by some former quack! When that happens, and it is not beyond the bounds of possibility, then our cup of bitterness will be full and running over.

Yours faithfully,

F. J. Kinghorn.

Moss House,
Scotland Lane, Horsforth, Leeds.
August 29th, 1948.

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THE XIV OLYMPIAD

Sir,—With reference to the note on the above in your issue of September 4th, may I add the name of Mr. Angus MacDonald Ewing Carmichael, M.R.C.V.S., Glasgow. Mr. Carmichael, a few days after qualifying, as a member of the British Football Team played in the Final at the XIV Olympiad, 1948.

To my knowledge this is the third occasion on which students of this College have been selected to represent Britain in the Olympiads.

I have a most reasonable expectation that a student member of this College will be selected to represent Britain in the XVth Olympiad, Helsinki, 1952.

Yours faithfully,

George Dykes.

Department of Medicine,
Glasgow Veterinary College.
September 5th, 1948.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange*	Sheep Scab	Swine Fever
August 16th, to 31st 1948	5	—	10	—	2	1
Corresponding period in—						
1947	4	—	20	—	6	1
1946	1	—	—	—	2	9
1945	7	—	—	—	1	43
Jan. 1st to August 31, '48	67	—	240	1	33	22
Corresponding period in—						
1947	67	103	716	1	41	20
1946	65	31	—	7	41	306
1945	78	101	—	6	49	659

NOTE.—The figures for the current year are approximate only.
* Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at August 31st, 1948, was as follows:—

England	Wales	Scotland	Total (Great Britain)
12,001	12,071	10,794	34,866